

NOVEMBER/DECEMBER 2025

**23PECH33B — BIOMOLECULES AND
HETEROCYCLIC COMPOUNDS
(Elective V)**

Time : Three hours

Maximum : 75 marks



SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are anomers? Give example.
2. Describe the physical properties of fructose.
3. Give the structure of estrogen and cortisol.
4. What are hormones?
5. What is Electrophoresis?
6. What are amino acids? Give examples
7. Draw the structure of the Nucleotide.
8. How will you convert nucleoside into nucleotide?
9. Write any one method for the preparations for isoindole.
10. Write any two reactions in benzothiophene.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Write a Haworth formula of maltose, lactose, and sucrose with their properties.

Or

- (b) What is glycolysis? Explain.
12. (a) Demonstrate the biosynthesis of cholesterol from squalene.

Or

- (b) Give a note on hormone classification.
13. (a) Summarize the amino acids catabolism.
- Or
- (b) Discuss the role of nucleic acid in protein synthesis.
14. (a) Discuss the structure and synthesis of nucleosides.

Or

- (b) Explain the Watson-Crick model.

15. (a) Discuss the reaction and properties of Benzofuran.

Or

- (b) Explain the reaction and properties of Isoquinoline.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. (a) Explain the biological role of carbohydrates. (4)
- (b) Explain any two polysaccharides. (6)
17. (a) Discuss the functions of adrenaline. (5)
- (b) Explain the brief notes on steroids. (5)
18. (a) Explain the Biosynthesis of protein. (5)
- (b) Discuss the urea cycle. (5)
19. Explain the primary and secondary structure of DNA and RNA.
20. Discuss the structure, synthesis, and properties of Quinoline and Indole.

